

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number

03-21

☐ Other ☐ Amendment Number:

Contract Number

EP-C-08-010

Contract Period 12/16/2008 To 11/30/2012

Base

Option Period Number 3

Title of Work Assignment/SF Site Name

Conveying Impact of NCER & ORD

Contractor

SCIENTIFIC CONSULTING GROUP, INC, THE

Specify Section and paragraph of Contract SOW

2.1,2.2,2.3

Purpose:



Work Assignment



Work Assignment Close-Out



Work Assignment Amendment



Incremental Funding



Work Plan Approval

Period of Performance

From 12/06/2011 To 11/30/2012

Comments:



Superfund

Accounting and Appropriations Data



Non-Superfund

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

SFO
(Max 2)

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:

12/16/2008 To 11/30/2012

Cost/Fee:

LOE:

This Action:

Total:

Work Plan / Cost Estimate Approvals

Contractor WP Dated:

Cost/Fee:

LOE:

Cumulative Approved:

Cost/Fee:

LOE:

Work Assignment Manager Name Myles Morse

Branch/Mail Code:

Phone Number 202-343-9706

FAX Number:

(Signature)

(Date)

Project Officer Name Verla Sutton-Busby

Branch/Mail Code:

Phone Number: 202-564-6808

FAX Number:

(Signature)

(Date)

Other Agency Official Name

Branch/Mail Code:

Phone Number:

FAX Number:

(Signature)

(Date)

Contracting Official Name Renita Tyus

Branch/Mail Code: CPAD

Phone Number: 513-487-2094

FAX Number: 513-487-2109

(Signature)

(Date)

PERFORMANCE WORK STATEMENT

Contract Number EP-C-08-010

Scientific Consulting Group

Work Assignment Number: 03-21

Title: Conveying the impact of NCER and ORD
funded research through Technology Transfer of
Impact of Metrics

Period of Performance: CO Approval through 11/30/2012

Work Assignment COR: Myles Morse
USEPA
Office of Research & Development
National Center for Environmental Research
1200 Pennsylvania Ave NW
Washington DC 20460 Mail code: 8727P
Phone: 703-347-8074
Email: morse.myles@epa.gov

Alternate Work Assignment COR: Ted Just
U.S. EPA
Office of Research & Development
National Center for Environmental Research
1200 Pennsylvania Ave NW
Washington DC 20460 Mail code: 8727P
Phone: 703-347-8054
Email: just.ted@epa.gov

Project Officer COR: Verla Sutton-Busby
U.S. EPA (8102R)
Office of Research and Development
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
Telephone: (202) 564-6808
Fax: (202) 565-2910
Email: sutton-busby.verla@epa.gov

Background:

In order for EPA to be considered a leader in environmental health research that has significant impact on our health, the environment, and the green economy, ORD & NCER must be able to convey the impact of our funded research to our various targeted audiences. Successful communication of research impacts will result in use of the research findings in policy and decision making processes, adoption of improved processes, technologies, methods, and in the implementation of community interventions. In order for the public and the Hill to understand the importance of our research, proper metrics must be developed and the resultant impact must be interpreted and conveyed through various communication mechanisms so that these audiences can easily see the impact of public dollars spent to protect human health and the environment.

Research impact metrics will also be used in various performance reviews of NCER's research programs. Performance reviews are conducted in four year cycles on ORD/NCER's research programs by the Board of Scientific Counselors (BOSC) and OMB (previously through the PART review process). Citation analyses (bibliometrics) and Decision Document Analyses (DDA) are currently run for these reviews as well as for mid-cycle meetings. In addition these impact measures are used by the ORD labs and centers for internal reviews and metrics such as the ORD score card.

These and other metrics such as the number of companies established, employee positions created, researchers funded, models, methods, processes developed, etc will be used to define NCER research impact on the green economy. NCER needs to be able to demonstrate to the Hill that our research funding has a large return on investment through direct impact on jobs, the economy, and developing the next generation of scientists and engineers. The ability to communicate these impacts thru several mediums will define the success and longevity of NCER's research programs.

The contractor shall assist in the analysis and compilation of various metrics reports, charts, graphics and other tools to demonstrate the worthiness and impact of NCER's funded research. The contractor shall develop new methods of conveying the impact of the analyses to all of our user audiences thru the EPA website, news media, PSAs, social networking sites, listserves, reports to congress, journals, local governments, school systems, public interest groups and other organizations, etc.

The contractor shall compile up to 10 bibliometric and decision document analyses reports as requested by the EPA WA COR. These reports shall include an executive summary as well as descriptions, tabulations, and graphic analyses of findings and comparisons using Thomson's Essential Science Indicators (ESI) database, Thomson's Incites, Web of Science, and El Sevier's Scopus and "bibliometrics in a box" database tools as described in 1 thru 10 below. The contractor shall also include a definition of baselines, and caveats about any changes to those baselines in the report. The contractor shall also run a comparison of the major findings with any previous bibliometric report prepared for each research area. The contractor shall maintain an awareness of standards and thresholds, as well as journal to field allocations used by ESI.

The contractor shall notify the EPA WA COR when any ESI threshold or methodology changes. The EPA WA COR may determine that the change is significant enough to warrant recalculation of previous analyses to allow current analyses to be comparable to past analyses. Bibliometric reports shall be submitted electronically to the EPA WA COR in word format. The contractor shall identify all pertinent citing documents including policy and decision documents at all levels of government. The contractor shall identify anecdotal examples show the impact of NCER's research projects that could be used in outreach campaigns to both targeted audiences and the general public.

Bibliometric & DDA Analyses of Intra and Extramural Publications for external reviews and for communicating impact of research to the public.

Task 1: Basic Bibliometric Analyses:

The contractor shall conduct up to 10 topical citation analyses using accepted web based tools such as Thomson's Web of Science (WOS), Dialog Citation Index, Scopus or other similar data bases. EPA will furnish the contractor with the bibliographies compiled by our NPDs and NCER's web database tool which houses bibliographic citations for all intramural (identified by the NPDs) and extramural program publications. These bibliographies will include a mix of publication types and will typically contain 200 to >3,000 journal publications. The contractor shall address and include the following elements and procedures:

- 1) Use Thomson's ten year rolling periods unless otherwise requested by the EPA WA COR (thru the National Program Directors (NPDs)). The contractor shall input this information into excel spreadsheets, a reference manager database, and the oracle database that feeds the NCER web search engine. The contractor shall run split analyses between intramural and extramural publications.
- 2) Searching WOS and Scopus, the contractor shall record the number of bibliographic citations per publication. In addition the contractor shall note any publications that would be considered highly cited using Thomson's Essential Science Indicator (ESI) database. The contractor shall run analyses for the 10%, 1%, 0.1%, and 0.01% highly cited threshold levels using the 22 research fields tracked by ESI. The number of publications falling into each threshold level shall be tabulated in the bibliometric document, and the full citations meeting each threshold shall be included either in the document or in an appendix (if in excess of 1 full page).
- 3) The contractor shall determine which papers would be considered hot papers using the ESI definition of a hot paper (# of citations within a 2 month period within 2 years of original publication). The contractor shall use this definition

plus the hot paper thresholds set for each of the scientific fields documented in ESI.

- 4) The contractor shall also include comparative tables of NCER and ORD publication average citation rates and ESI's average citation rates for each scientific field.
- 5) The contractor shall include an analysis of the publications for impact factor (the measure of the frequency with which the average article in a journal has been cited in a given year) using Thomson's Journal Citation Index (JCR). This analysis shall include the number of papers published in the top 10% of journals as ranked by the JCR for impact factor.
- 6) The contractor shall include an analysis of the publications for immediacy index (the measure of how quickly the average article is cited in a particular journal) again using the JCR. This analysis shall include the number of papers published in the top 10% of journals as ranked by JCR for immediacy index.
- 7) The contractor shall include an analysis of author self citation to determine if the self citation rate is above or below average. Currently thresholds are used from publications by Mac Roberts, and Kovacic and Misak. The contractor shall determine whether self citation thresholds are changing by searching for other documentation on a quarterly basis.
- 8) The contractor shall include an analysis of number of authors that have been included in Thomson's HighlyCited.com database.
- 9) The contractor shall include an analysis of any patents listed in the bibliography. The contractor shall also search all principal investigators and coauthors to identify patents associated with the research. This shall also include a tally of the number of patents that were referenced by other patents.
- 10) The contractor shall include comparisons with any additional ESI special topic parameters including top 20 papers, top 20 authors, top 20 countries publishing in the field, top 20 journals in the field, top 20 institutions publishing in the field, and ESI special topics trends analyses (publication rates, citation rates) for topic matched papers used by ESI within the special topic as compared to EPA/NCER papers in that topic. Both graphical and tabulated comparisons shall be included in the bibliometric analysis.
- 11) The contractor shall run separate analyses on intra vs. extramural publications and show comparison tables that compare the combined program against intramural and extramural publications. The contractor shall compile the extramural citation data into a separate table which summarizes extramural grants program both on a program specific level and on an overall center level.

Task 2: Data Mining Analyses/DDA Reports

Data mining analyses are designed to show what pertinent EPA policy and rulemaking documents cite the Principle Investigator's (PI) publications from the bibliography compiled for each research area. NCER has developed a search tool located at:

http://cfepa.saic-solutions.com/citing_ncer/RC_Summary.cfm

which operates from the NCER research project database and searches the EPA electronic dockets and the EPA web inventory. Any EPA documents that cite any of the research publications from the bibliography are brought back as "returned hits" identifying (where possible) the EPA office owning the citing document. The contractor shall perform the following tasks as assigned by the EPA WA COR with respect to data mining and compilation of the DDA reports:

- 1) Append/update the database holdings as necessary with updates that may have been included in the NPD research program bibliography; also non-journal publications shall be added to the data mining search from the bibliography. The contractor shall furnish these updates to EPA in the form of a RIS file.
- 2) The EPA WA COR shall provide the data mining "hit list" to the contractor. The contractor shall eliminate any documents that are not policy or rulemaking documents. Also remove any ORD documents that cannot be supported as major rulemaking or policy documents. The contractor shall analyze how the NCER PI publications are being used in the EPA internal documents identified by the data mining tool.
- 3) Data mining results from (2) above shall be tabulated and included in the bibliometric report. Graphical representations shall also be developed to assist in communicating this research impact thru various communication media.
- 4) The contractor shall run "Google Analyses" on subsets of the bibliographies based on a highly cited list and a randomly selected subsample. The contractor shall note any trends in the types of users, or any relationship with how they are being cited/used and by whom.

Task 3: Special add-ons to Bibliometric Reports

The NPDs may request through the NCER WACOR, additional permutations to be run as a part of the bibliometric analysis. The following types of additional reports shall be run if requested by the EPA WA COR:

- 1) Citation Analysis of non-journal publications: The contractor shall run searches using Dialog, ISI, and Google tools to identify citations in scientific journals of EPA reports, book and book chapters, and other non journal publications as requested by the EPA WA COR. These citation analyses shall also be compared to the ISI broad scientific categories.
- 2) Intramural vs. Extramural splits – if requested by the BOSC, a split analysis and

comparison of intramural vs. extramural publications shall be run comparing highly cited, high impact factor and high immediacy index rankings.

3) Gray literature – a wider Google analysis of EPA white papers may be requested. Analysis of citing web sites and journal and non-journal citing documents shall also be included.

4) Collaborative analyses – in some cases an analysis of collaborating or affiliated organizations will be requested. Publications would under this scenario be analyzed for affiliated institutions.

6) Other time splits – in some cases analyses by year, 5 year increments or other time duration permutation may be requested.

7) Analysis by focus area – in some cases sub-analyses within a research area may be identified by the NPD for separate comparative analyses. In these cases the NPD will provide the appropriate project and publication allocation.

Task 4: Broadcasting the Impact of how cited research is being used

- 1) The contractor shall as requested by the EPA WA COR, perform a manual analysis of the full text of some percentage of highly cited and hot publications to categorize and determine how these publications are being used by other scientists in the field. As a part of this analysis the contractor shall determine whether the research provided special tools or methods, baseline characterization, dose response relationships, etc.
- 2) The contractor shall compile anecdotal examples to convey the extent of research impact. These examples may be worthy of developing multimedia presentations about research impact including videotaped interviews; podcasts (audio and video);
- 3) The contractor shall develop communication plans that engage the public and targeted audiences through PSAs, videos, podcasts, and other multimedia tools.
- 4) The contractor shall determine the impact of these types of communication tools on informing various user groups about Return on Investment of each communication effort.

Schedule of Deliverables

Citation Analyses by RFA Category COR	Within 4 weeks from assignment by the EPA WA
Impact Analyses	Within 8 weeks from assignment by the EPA WA COR
Videos and other multimedia:	Within 4 weeks from assignment by the EPA WA COR

A) Staffing

In the work plan, the contractor must identify qualified staff to perform tasks provided in the work assignment. Staff must be qualified to perform citation rate searches on multiple systems. Staff must be qualified to perform bibliometric analyses of citation information and perform comparative analyses with Essential Science Indicators (ESI).

B) Conflict of Interest

The contractor will disclose any conflict of interest regarding this work.

C) Management Controls

Analyses and materials prepared by the contractor will be based on information obtained by the contractor at the direction of the EPA WA COR. Information will be provided to the contractor directly from the principle investigators, the EPA WA COR, or the NPDs.

Deliverables shall be provided to EPA in accepted Agency format and be of high quality. Analysis report deliverables shall be prepared using Excel and Word or appropriate spreadsheet and word processing software. Multimedia deliverables shall be submitted electronically to the EPA WA COR via e-mail as well as via DVDs.

Periodic meetings between the EPA and contractor work assignment managers are encouraged to discuss any questions that may arise during performance or completion of this work assignment. At the EPA WA COR's discretion, these meetings may occur via teleconference or video conferences. The contractor shall document these meetings and submit copies of this correspondence to the EPA WA COR.

The EPA WA COR may identify one or more EPA technical representatives for this work assignment. Interaction between the contractor and any EPA technical representative(s) designated by the EPA WA COR is solely for the purpose of presenting

and discussing the information, analyses, results, or presentations related to this work assignment. The interaction will be technical communication vice technical direction. Per the technical direction clause EPAAR 1552.237-71 of the contract, the EPA PO COR and the EPA WA COR or alternate EPA WA COR are the only representatives of the CO authorized to provide technical direction.

Per the technical direction clause, the CO and PO will be provided with copies of all technical direction.